UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,289	03/12/2002	Constantin Ilas	Ilas 2-6-6	1476

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Docket Administrator Room 3C 512
Lucent Technologies Inc
600 Mountain Avenue
PO Box 636
Murray Hill, NJ 07974-0636

EXAMINER
MAIS, MARK A

ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/980,289	ILAS ET AL.
	Examiner	Art Unit	
	Mark A. Mais	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *12 March 2002*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-15* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-15* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *12 March 2002* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some *   c) ☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *November 29, 2001*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have

been placed of record in the file.

Drawings

2. The drawings were received on March 12, 2002. These drawings are approved.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on November 29, 2001 was filed

together with the Application. The submission is in compliance with the provisions of 37

CFR 1.97. Accordingly, the examiner considered the information disclosure statement.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

5. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beming et al.

(WO 99/16264) in view of Stacy et al. (USP 6,434,154).

6. With regard to claim 1, Beming et al. discloses a method of transmitting speech frames in a

TDMA packet switched network **[data blocks used to send voice or video, page 1, lines 16-22]**

in which at least one time-slot of the TDMA frame is allocated to at least two users, the method

comprising:

encoding **[encoded on the RLC level, page 4, lines 24-27]** user data **[user data, page 6,**

lines 31-32; user data can be real time (speech) or non real time, page 3, line 29 to page 4,

line 2] from the at least two users into a single RLC/MAC block; and transmitting at least a

portion of the encoded RLC/MAC block in the at least one time-slot **[data from each packet**

data unit (PDU) is multiplexed into one transmission block for transmission/delivery over

one channel, page 7, line 29 to page 8, line 4; *see also* Fig. 6].

Beming et al. does not specifically disclose a TDMA packet-switched network in which

one time-slot for a TDMA frame is allocated to at least two users. Beming et al. discloses a

multiple access method, which handles multiple services **[page 1, lines 13-14]**. Beming et al.

also discloses transmitting multiples types of data from a mobile station at multiple transmission

rates **[page 1, lines 13-22]**. Stacy et al. (USP 6,434,154) discloses a TDMA packet-switched

network that uses a multiple access method, which handles multiple transmission rates

[Abstract, col. 6, lines 15-29]. Stacy et al. accomplishes this by subdividing one timeslot of a

TDMA frame into several mini-slots, which can be allocated to [plural] user traffic on an

individual [interpreted as dynamic] basis **[col. 4, lines 37-41]**. Stacy et al. allocates periodic

mini-slots to lower bit-rate services while allocating high bit-rate services to larger blocks

(comprised of multiple mini-slots) **[Abstract; col. 6, lines 15-29]**. Stacy et al. further discloses

that one frame may be allocated to more than one user [col. 6, lines 26-29]. Thus, it would have

been obvious to one of ordinary skill in the art at the time of the invention to have used a

multiple access method, such as TDMA, to handle plural types of transmission rates by

allocating more than one user to each TDMA frame and subdividing a timeslot into several mini-

slots which can be allocated to user traffic on an individual [interpreted as dynamic] basis [col. 4,

lines 37-41].

7. With regard to claim 2, Beming et al. discloses that the transmitting step comprises

transmitting the encoded RLC/MAC block in a plurality of time-slots, wherein the plurality

includes the at least one time slot [data from each packet data unit (PDU) is multiplexed into

one transmission block for transmission/delivery over one channel, page 7, line 29 to page

8, line 4; *see also* Fig. 6].

8. With regard to claim 3, Beming et al. discloses that the transmitting step includes a step of

interleaving the RLC/MAC block such that the at least one time-slot carries at least a part of the

user data from each of the two users [data from each packet data unit (PDU) is multiplexed

into one transmission block for transmission/delivery over one channel, page 7, line 29 to

page 8, line 4; *see also* Fig. 6].

9. With regard to claim 4, Beming et al. discloses that the at least one time-slot carries at least a

part of the user data from each of the two users [data from each packet data unit (PDU) is

multiplexed into one transmission block for transmission/delivery over one channel, page 7,

line 29 to page 8, line 4; *see also* **Fig. 6]**.

10. With regard to claim 5, Beming et al. discloses that the network is an EDGE packet switched

network **[it is inherent that one of several TDMA packet data networks applicable to the**

disclosed invention includes GSM, EDGE, or UMTS];

　　　the user data is speech **[user data, page 6, lines 31-32; user data can be real time**

(speech) or non real time, page 3, line 29 to page 4, line 2]; and

　　　　the transmitting step comprises transmitting the RLC/MAC block in four of the plurality

　　　　of time-slots **[the PDUs are interleaved according to bit rate services such that one**

　　　　transmission block can carry four interleaved lower bit rate PDUs or the interleaved

　　　　high bit rate PDUs are spread over four transmission blocks, page 7, line 17-28] .

11. With regard to claim 6, Beming et al. discloses that each time slot carries a quarter of the

encoded user data for each user **[when spreading the interleaved high bit rate PDUs over four**

transmission blocks, the minimum number of interleaved PDUs per transmission is one

(and, therefore, one-fourth of the interleaved data), page 7, lines 17-28].

12. With regard to claim 7, Beming et al. discloses that the transmitting step includes a step of

interleaving the RLC/MAC block such that in each TDMA frame the at least one time slot

carries at least a part of the user data from only one of the two users **[when combining two**

same-transmission-rate radio bearers, the use of both variable and available bit rate

services together will inherently send one user's PDUs, and, while the other user is "idle"

(and not sending any PDUs), will attempt to multiplex the available bit rate service onto the

same channel, page 8, lines 15-23].

13. With regard to claim 8, Beming et al. discloses that each TDMA frame the at least one time-

slot carries at least a part of the user data from one of the two users [when combining two same-

transmission-rate radio bearers, the use of both variable and available bit rate services

together will inherently send one user's PDUs, and, while the other user is "idle" (and not

sending any PDUs), will attempt to multiplex the available bit rate service onto the same

channel, page 8, lines 15-23].

14. With regard to claim 9, Beming et al. discloses that an encoded speech frame from each of

the two users is carried over an alternate ones of a plurality of time slots, wherein the plurality of

time slots include the at least one time slot [the PDUs are interleaved according to bit rate

services such that one transmission block can carry four interleaved lower bit rate PDUs or

the interleaved high bit rate PDUs are spread over four transmission blocks, page 7, line

17-28].

15. With regard to claim 10, Beming et al. discloses that the network is an EDGE packet switched

network [it is inherent that one of several TDMA packet data networks applicable to the

disclosed invention includes GSM, EDGE, or UMTS] ;

the user data is speech [**user data, page 6, lines 31-32; user data can be real time**

(speech) or non real time, page 3, line 29 to page 4, line 2]; and

the transmitting step comprises transmitting the RLC/MAC block in four of the plurality

of time-slots [**the PDUs are interleaved according to bit rate services such that one**

transmission block can carry four interleaved lower bit rate PDUs or the interleaved high

bit rate PDUs are spread over four transmission blocks, page 7, line 17-28].

16. With regard to claim 11, Beming et al. discloses that alternate time slots carry half of the

encoded user data for each user [**similar to the description above, if the two of the user's**

PDUs (for example, 16 PDUs) are transmitted over eight time-slots (4 time-slots and their 4

alternate time-slots), half of the encoded user data for each user (8 PDUs) will be carried by

the 4 alternate time-slots, page 7, lines 17-28].

17. With regard to claim 12, Beming et al. discloses that the user data comprises speech [**user**

data, page 6, lines 31-32; user data can be real time (speech) or non real time, page 3, line

29 to page 4, line 2].

18. With regard to claim 13, Beming et al. discloses that the network is a wireless network

[**mobile station and base station, page 1, lines 16-22; Fig. 1**], and

the speech frames are transmitted on the down-link of the network [**speech frames are**

sent via layer 2 (RLC/MAC protocol layer) between both (1) the mobile station and the

base station/network, and (2) the base station and the mobile station (i.e., radio resource management and radio link control), page 4, lines 14-20; Fig. 2].

19. With regard to claim 14, Beming et al. discloses that the network is a wireless network **[mobile stations and base station, page 1, lines 16-22; Fig. 1];** and

user data is transmitted on the up-link of the network **[speech frames are sent via layer 2 (RLC/MAC protocol layer) between both (1) the mobile station and the base station/network, and (2) the base station and the mobile station (i.e., radio resource management and radio link control), page 4, lines 14-20; Fig. 2].**

20. With regard to claim 15, Beming et al. discloses that the at least one time-slot simultaneously carries at least a part of the user data from each of the two users **[data from each PDU from each user is multiplexed into one transmission block for transmission/delivery over one channel, page 7, line 29 to page 8, line 4;** *see also* **Fig. 6].**

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

(a) Klein et al., "FRAMES Multiple Access Mode 1 – Wideband TDMA with and without Spreading", September, 1997, IEEE Symposium, Vol. 1, pages 37-41. This reference discloses all the limitations presented in Applicant's claims 1-15. Specifically, a TDMA packet-based network, which transmits one, or multiple speech frames from two users encoded and

interleaved into one RLC/MAC block wherein each block has variable-length time-slots (1, 4, 8, etc.).

(b) Chang et al. (USP 6,813,252), Method and system for interleaving of full rate channels suitable for half duplex operation and statistical multiplexing.

(c) Ejzak (USP 6,772,112), System and method to reduce speech delay and improve voice quality using half speech blocks.

(d) Tan (USP 6,920,121), Quality packet radio service for a general packet radio system.

(e) Brent (USP 6,590, 876), Direct Path matrix communication system and method.

(f) Wolfgang (USP 6,609,223), Method for packet-level FEC encoding, in which on a source packet-by-packet basis, the error correction contributions of a source packet to a plurality of wildcard packets are computed, and the source packet is transmitted thereafter.

(g) Roobol et al. (USP 6,363,058), Multi-service handling by a single mobile station.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark A. Mais whose telephone number is (571) 272-3138. The examiner can normally be reached on 6:00-4:30.

23. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

24. Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

29 November 2005

Seema S. Rao

SEEMA S. RAO 3/6/06
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600